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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* SUNDEEP CHANDHOKE, NICOLAS VAZQUEZ, DAVID W.  
FULLER, and CHRISTOPHER CIFRA

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Appeal 2009-002785  
Application 10/051,442  
Technology Center 2100

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Decided: March 30, 2010

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Before LANCE LEONARD BARRY, JEAN R. HOMERE, and STEPHEN  
C. SIU, *Administrative Patent Judges*.

BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Patent Examiner rejected claims 1-4, 6-24, 26-30, 32-40, 42-46, 48-54, 57-62, and 66-81. The Appellants appeal therefrom under 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

## INVENTION

The invention at issue on appeal "develop[s] a prototype that comprises a sequence of motion control, machine vision, . . . or data acquisition (DAQ) 'MC/MV/DAQ' operations." (Abstract, ll. 2-4.)

## ILLUSTRATIVE CLAIM

53. A computer-implemented method for creating a prototype that includes machine vision and Data Acquisition (DAQ) functionality, the method comprising:

- displaying a graphical user interface (GUI) that provides GUI access to a set of operations, wherein the set of operations includes one or more machine vision operations and one or more DAQ operations;

- creating a sequence of operations, wherein creating the sequence comprises including a plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations from the GUI, wherein including the plurality of operations in the sequence in response to the user input selecting each operation in the plurality of operations from the GUI comprises including the plurality of operations in the sequence without receiving user input specifying program code for performing the plurality of operations;

- wherein the plurality of operations included in the sequence includes at least one machine vision operation and at least one DAQ operation, wherein at least one of the DAQ operations included in the sequence is operable to control a DAQ measurement device to acquire measurement data of a device under test;

- wherein the method further comprises storing information representing the sequence of operations in a data structure, wherein the sequence of operations comprises the prototype.

PRIOR ART

Blowers	6,298,474 B1	Oct. 2, 2001
Weinhofer	6,442,442 B1	Aug. 27, 2002 (filed Sept. 30, 1999)
Wolfson	6,801,850 B1	Oct. 5, 2004 (filed Oct. 29, 2001)

SoftMap, Inc., Digital Camera Data Acquisition Software,  
<http://softmap.com/dcdas.html> (2002).

Windmill Software Ltd, Glossary of Data Acquisition,  
<http://web.archive.org/web/20010815213952/http://www.windmill.co.uk/glossary.html> (June 27, 2007).

REJECTIONS

Claims 53, 54, and 57-60 stand rejected under 35 U.S.C. 102(e) as being anticipated by Blowers.

Claims 1-4, 6-20, 24, 26-30, 32-40, 42-46, 48-52, 61-62, 66-69, 71-73, 76 and 78 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Blowers and Weinhofer.

Claims 21-23, 70, 74-75, 77, and 79-81 stand rejected under § 103(a) as being unpatentable over Blowers, Weinhofer, and Wolfson,

CLAIMS 53, 54, AND 57-59

Based on the Appellants' arguments, we will decide the appeal of claims 53, 54, and 57-59 based on claim 53 alone. *See* 37 C.F.R. § 41.37(c)(1)(vii).

ISSUE

The Examiner finds that "[t]he computer of Blowers operates as a device that acquires data, and therefore can be read as a Data Acquisition device." (Answer 19.) She further finds that the reference's "sequence controls the device to acquire the measurement data (Col. 11, line 65 et seq. and Caliper tool 63) of the device under test . . . ." (*Id.* at 18.) The Appellants argue that "those skilled in the art would interpret Blower's [sic] Caliper tool and other image functions not as DAQ operations, but as machine vision operations" (Reply Br. 6); "[t]his type of data acquisition also clearly requires some other device than just the host computer, i.e., requires a device that actually acquires the data" (*id.* at 4); and "[m]easuring aspects of an image that has been acquired is not at all the same as acquiring measurement data of a device under test itself." (*Id.* at 3.) Therefore, the issue before us is whether the Appellants have shown error in the Examiner's finding that Blowers discloses at least one of DAQ operation operable to control a DAQ measurement device to acquire measurement data of a device under test.

LAW

"It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim, and that anticipation is a fact question . . . ." *In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986) (citing *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1457 (Fed. Cir. 1984)).

#### FINDINGS OF FACT ("FFs")

1. In *Blowers* a "method is provided for developing a graphical, control-flow structure such as a tree structure and associated application software for use in a machine vision system utilizing a computer system." (Col. 3, ll. 14-18.) A "user does not write a single line of code, but rather sets variables that the machine vision tools require interactively." (Col. 2, ll. 53-55.)

2. "There are two phases in the operation of . . . [Blowers'] invention[.]" (Col. 11, ll. 38-39.) The reference includes the following description of the first phase.

In the first phase the user "designs" [a] system [to] do a particular application. Using the computer keyboard 12 and monitor 10, the user "configures" the system for a particular application e.g. part identification, measurement etc. Use of the system is made easy by the menu-driven user interface which provides the user with all the commands in a structured and hierarchical manner.

(*Id.* at ll. 47-53.) "The system stores the particular sequence of commands that make the application into an application file." (*Id.* at ll. 55-56.)

3. Blowers includes the following description of the sequenced commands.

Many commands are available to include meteorology (measurement) functions and image analysis functions. Examples of meteorology functions include the measurement of distances, angles, diameters, perimeter, areas, straightness, roundness and shape. Examples of vision functions include gray level edge finding (capable of finding subtle grey level edges), projection, edge sniffing and feature correlation.

(Col. 11, ll. 66 – col. 12, l. 6.)

4. "A camera or acquire control 62 allows a user to capture and store an image from a video camera." (Col. 9, ll. 42-43.) A "caliper tool 63 is used to locate pairs of edges within an inspection image." (*Id.* at ll. 44-45.) "The caliper tool 63 is typically used to measure component width by finding edges with sharp contrast changes." (*Id.* at ll. 47-49.)

5. Data acquisitions is defined as "[t]he automatic collection of data from sensors, instruments and devices: in a factory, laboratory or in the field." Windmill Software Ltd, Glossary of Data Acquisition, <http://web.archive.org/web/20010815213952/http://www.windmill.co.uk/glossary.html> (June 27, 2007).

#### ANALYSIS

Blowers discloses meteorology (measurement) functions including the measurement of distances, angles, diameters, perimeter, areas, straightness, roundness, and shape. (FF 3.) Among these measurement functions is locating pairs of edges within an inspection image via a caliper tool. (FF 4.)

Because data acquisition refers to the automatic collection of data from sensors, instruments, and devices (FF 5), we agree with the Examiner's finding that the reference's use of its caliper tool to collect measurements constitutes a DAQ operation.

Blowers uses a computer system to implement its functions. (FF 1.) Because data acquisition can be performed from a device (FF 5), we also agree with the Examiner's finding that the computer system constitutes a DAQ measurement device.

Blowers also uses a camera or acquire control to capture and store an image from a video camera. The reference then uses the caliper tool to locate pairs of edges within an inspection image, to measure component width. (FF 4.) Because Blowers is measuring the width of a component, we agree with the Examiner's finding that it acquires measurement data of a device under test. The fact that the reference uses an image of the component in its meteorology does not change the fact that Blowers is measuring the component.

#### CONCLUSION

Based on the aforementioned facts and analysis, we conclude that the Appellants have shown no error in the Examiner's finding that Blowers discloses at least one of DAQ operation operable to control a DAQ measurement device to acquire measurement data of a device under test.



### CLAIM 60

The Examiner makes the following findings.

In both the claim[ ] and Blowers, the user generates the sequence which the systems use to automatically generate the nodes of the graphical program, the user does not specify the nodes themselves in either implementation. This is a simplistic concept of programming called encapsulation. Encapsulation can be thought of as a black box, where the user knows the value they want to find, but not the nodes that are used to retrieve that result. Encapsulation allows the user to create a sequence without having to write the code to carry it out. As seen in the cited Figures 6 and 7 the user uses the icons such as "Acquire", "Alignment", "Set Pass" etc. to represent the sequence without writing the underlying code that performs these functions (Col. 3, lines 64-65).

(Answer 19.) The Appellants argue that "the nodes/icons in Blowers' tree view structure . . . are not automatically included in the tree view structure without user input specifying the nodes/icons . . . ." (Reply Br. 9.)

### ISSUE

Therefore, the issue before us is whether the Appellants have shown error in the Examiner's finding that Blowers includes interconnected nodes in a graphical program as recited in claim 60.

### LAW

"[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000) (citations omitted).

#### FINDINGS OF FACT

6. The Appellants' Specification (p. 27) explains that "[i]n step 421, a MC/MV/DAQ operation may be added to the sequence in response to user input. In various embodiments, the user may interact with the graphical user interface of the motion control prototyping environment in any of various ways to select a MC/MV/DAQ operation." For example, "a plurality of icons may be displayed, each icon corresponding to a particular operation. The user may select the appropriate icon to add the desired operation, e.g., by dragging and dropping the icon onto an area of the display screen representing the sequence." (*Id.*) "Step 421 preferably does not involve the user specifying or writing any program code. In other words, the user preferably interacts with the graphical user interface at a high level to add the desired MC/MV/DAQ operation to the sequence." (*Id.*)

7. Blowers includes the following disclosure.

A design engine or task sequencer engine 46 is used to configure and test the flow and design of the application software as illustrated by an exemplary task sequencer list of FIG. 6. Graphical representations or icons are selected from the tool boxes of FIG. 5 which correspond to desired functional tasks and are linked into the tree structure of FIG. 6 by a task sequencer interface 50 in the desired locations.

(Col. 8, ll. 61-67.)

#### ANALYSIS

Giving claim 60 the broadest, reasonable construction consistent with the Specification (FF 6), the limitations require a user to interact with a graphical user interface at a high level, e.g., by selecting an appropriate icon,

to add a desired operation to a sequence. In *Blowers*, a user selects an icon from a graphical tool box, wherein the icon corresponds to a desired functional task, and a task sequencer interface automatically links the desired icon into a graphical tree structure. (FF 7.) Consequently, we agree with the Examiner that the claims and the reference operate in the same manner.

#### CONCLUSION

Based on the aforementioned facts and analysis, we conclude that the Appellants have shown no error in the Examiner's finding that *Blowers* includes interconnected nodes in a graphical program as recited in claim 60.

#### CLAIMS 1-4, 6-24, 26-30, 32-40, 42-46, 48-52, 61, 62, AND 66-81

The Examiner admits that "*Blowers* . . . fail[s] to show the motion control functionality with a motion control operation as recited in the claims." (Answer 7.) She finds that "*Weinhofer* explains how motion controllers are part of many industrial control systems including programmable controller systems (Col. 1, line 48) . . . and that it would be advantageous to use *Weinhofer* along with such other systems. *Blowers* teaches such a system in it's [sic] programmable controller system." (Answer 20.) She concludes that "[w]hile *Weinhofer* does not explicitly state the exact terminology of the graphical automotive controller to be all-purpose, the above recitations of *Weinhofer* show that it may be used in . . . systems like the one used in *Blowers*." (*Id.* at 21.) The Appellants argue that "*Blowers* nowhere teaches such a programmable controller system . . . ." (Reply Br. 9.)

#### ISSUE

Therefore, the issue before us is whether the Appellants have shown error in the Examiner's reason for combining teachings from Blowers and Weinhofer.

#### LAW

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (citing *In re Lee*, 277 F.3d 1338, 1343-46 (Fed. Cir. 2002); *In re Rouffet*, 149 F.3d 1350, 1355-59 (Fed. Cir. 1998)). "To facilitate review, this analysis should be made explicit." *KSR Int'l v. Teleflex Inc.*, 550 U.S. 398, 401 (2007). "A rejection based on section 103 clearly must rest on a factual basis. . . ." *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967). "The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not . . . resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis." *Id.*

#### ANALYSIS

Here, a premise of the Examiner's reason for combining teachings from Weinhofer with those of Blowers is that the latter reference describes a programmable controller system. (Answer 20.) We agree with the Appellants, however, that "Blowers nowhere teaches such a programmable

controller system . . . ." (Reply Br. 9.) To the contrary, Blowers describes its invention as a method for developing a graphical, control-flow structure and associated application software. (FF 1.) The Examiner has not explained why it would have been obvious to employ teachings from Weinhofer in a method for developing a graphical, control-flow structure and associated application software.

Furthermore, the Examiner's reason for combining teachings is also based on her characterization of Weinhofer as a "graphical automotive controller." (Answer 21.) Like the Appellants, however, we "can find no teaching in Weinhofer of this alleged ' . . . graphical automotive controller.'" (Appeal Br. 20.) Assuming *arguendo* that the latter reference described an automotive controller, such a description would not provide a reason to combine teachings therefrom with those of Blowers because the Appellants do not allege, let alone show, that the latter reference is directed to an automotive controller.

#### CONCLUSION

Based on the aforementioned facts and analysis, we conclude that the Appellants have shown error in the Examiner's reason for combining teachings from Blowers and Weinhofer.

#### DECISION

We affirm the rejection of claims 53, 54, and 57-60. In contrast, we reverse the rejections of claims 1-4, 6-24, 26-30, 32-40, 42-46, 48-54, 57-62, and 66-81.

No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

Erc

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